

A1  
C1  
cont.  
only

(c) a lactic acid bacteria plasmid sequence, which comprises a plus origin of replication, and a nucleic acid sequence encoding a protein which is involved in replication of the lactic acid bacteria plasmid; and  
(d) a marker gene that is not an antibiotic resistance gene and the promoter sequence thereof.

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A2  
Subc1

Claim 4. (Amended) The Lac shuttle vector as claimed in claim 3, wherein the protein which is involved in the lactic acid bacteria plasmid replication is Rep A protein consisting essentially of 317 amino acids.

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Claim 5. (Amended) The Lac shuttle vector as claimed in claim 1, wherein said marker gene is  $\beta$ -galactosidase gene.

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A3

Claim 9. (Amended) The Lac shuttle vector as claimed in claim 1, wherein the Lac shuttle vector is selected from the group consisting of:

(a) pCLP7 having the configuration of restriction sites in FIG. 4, American Type Culture Collection Accession No. PTA-2661; and

(b) pCLP8 having the configuration of restriction sites in FIG. 4, American Type Culture Collection Accession No. PTA-2663.

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Claim 11. (Amended) The Lac shuttle vector as claimed in claim 10, wherein the host cell is the Lac- mutant of *Lactobacillus casei*, subsp. casei, which is designated Ana-1, American Type Culture Collection Accession No. PTA-2662.

A4  
Sub B2

Claim 12. (Amended) A kit for expression of a gene, comprising:  
(a) the Lac shuttle vector as claimed in claim 1;  
(b) a host cell which the endogenous  $\beta$ -galactosidase gene thereof is not capable of producing a normal enzymatic function; and  
(c) an eukaryotic cell.

Claim 13. (Amended) A DNA vaccine composition comprising the Lac shuttle vector as claimed in claim 1.

Claim 14. (Amended) A method for selection of a host cell containing a vector, comprising:

- (i) introducing into said host cell the Lac shuttle vector as claimed in claim 1, wherein the endogenous  $\beta$ -galactosidase gene of said host cell is not capable of producing a normal enzymatic function; and
- (ii) culturing said host cell transformed in step (i) under conditions which lactose is the only carbon source,
- thereby selecting a host cell comprising Lac shuttle vector of claim 1.